

Heritage Interpretation as a potential driver for economic development, environmental conservation and cultural regeneration in southern Africa

Example: Namib-Naukluft Park in Namibia

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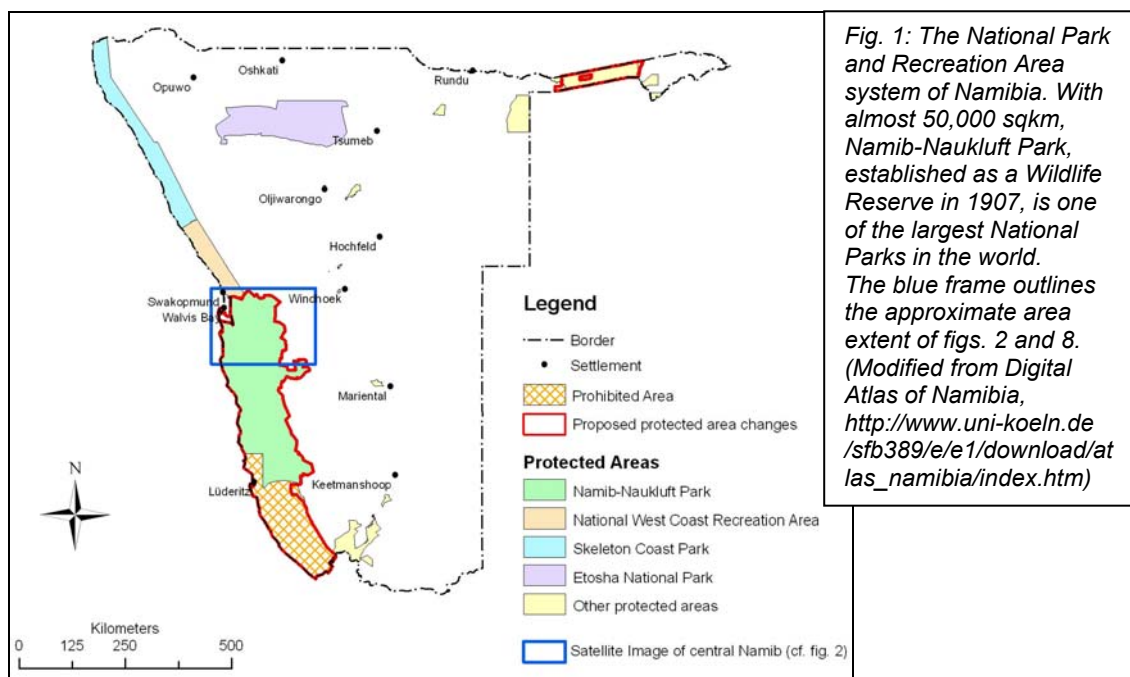
Summary

The paper assesses the potential of natural and cultural heritage for interpretation in the Namib Desert and gives examples for its implementation. The authors demonstrate that environmental education and heritage presentation can help resolve resource and land use conflicts among the different stakeholders within Namib-Naukluft Park. Economic development and cultural regeneration as possible benefits of integrating local communities into different concepts of heritage presentation, environmental education and nature conservation are analysed through a case study of the indigenous Topnaar people living in the Park.

1 Introduction

This paper is an updated version of the presentation given at The Vital Spark conference in Aviemore in 2007. Recent developments in the project area have led to additional research results which are included in this paper.

Tourism in southern Africa, at a 10% per annum growth rate, contributes substantially to the national economies and employment of the local people. It stimulates social and economic development and new infrastructure in remote regions. The Namibian tourism sector has already generated more than 70,000 jobs (total Namibian population: 2.1 million people) in the whole country, and is especially important for rural areas which



have difficulties participating and competing in industrial jobs. The number of tourist arrivals to Namibia has increased rapidly by 565% from 196 000 in the year 1990 to 1 108 000 arrivals in the year 2009 (WTTC NAMIBIA 2009). Approximately 33% of the tourists arrive from Angola (mostly for commercial reasons), and ca. 25% originate from non-African countries (mainly from Europe for holiday and leisure) (NAMIBIA TOURISM BOARD TOURIST ARRIVALS 2007).

One of the most significant tourist attractions within Namibia is the Namib Desert, the oldest desert in the world, which stretches over 270 000 km² along the southwest African coast and represents an icon of Namibia with the highest dunes in the world. Though large tracts of the Namib Desert are protected within the Namib-Naukluft, Skeleton Coast, and Sperrgebiet Conservation Areas (fig. 1) with further new protection areas envisaged, over-utilisation and uncontrolled tourism can cause degradation of fragile ecosystems and loss of traditional culture of indigenous tribes even in these natural areas.

2 Assessing the potential of the natural and cultural heritage for interpretation: An overview

For many years, student research groups, graduates and post-graduates from Namibian academic institutions have surveyed and evaluated natural and human resources in the Kuiseb River Basin (fig. 2) of the central Namib. Flora and fauna, soils, water, climate,

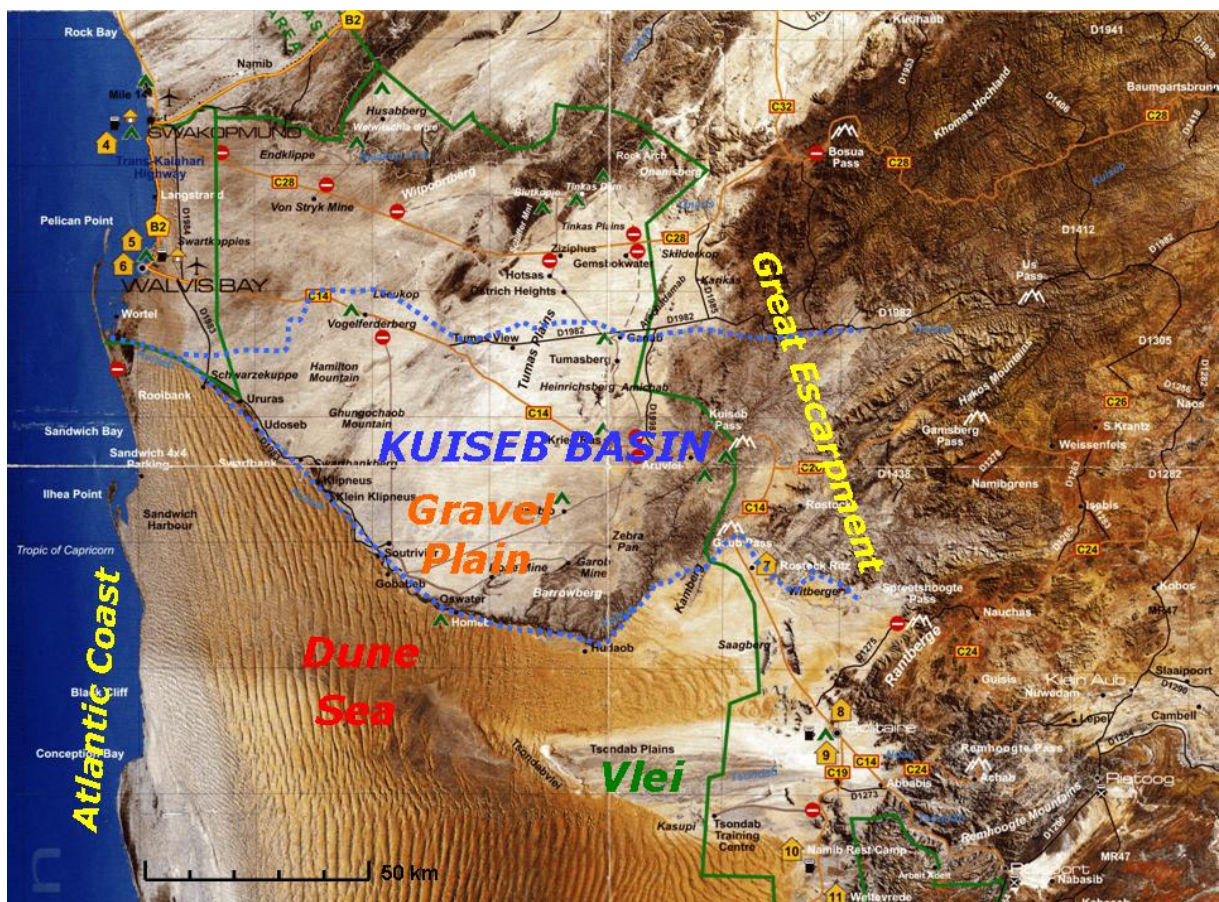


Fig. 2: The central Namib Desert with the Kuiseb River and the natural regions of the Dune sea, Gravel Plains, Atlantic Coast, and "Vleis" (salt clay plains). The central Namib Desert is bordered by the Atlantic Ocean to the west and the Great Escarpment to the east, and it is traversed from east to west by the ephemeral Kuiseb river (marking the boundary between the Dune Sea and the Gravel Plains), and the Swakop river to the North. The watershed boundary of the Kuiseb River is marked as a blue dotted line, the boundary of Namib-Naukluft Park is marked as a green line (Satellite base map: section from Explorer Maps 2003, supplemented).

land use, population, cultural traditions, and infrastructure have been analysed to assess the physical and cultural base for multiple land use strategies and for heritage interpretation. Much information and data have been collected in this way, some of which still needs to be processed and evaluated. Appendix 2 summarises selected projects part of which concerned the assessment of natural and human resources in the Namib with special reference to the Kuiseb River.

Some interesting topics for natural heritage interpretation in the Namib Desert that are presented in these studies concern:

- Survival strategies and adaptations of plants and animals to arid environments (e.g. fig. 3)
- Formation and dynamics of sand dunes and gravel plains (e.g. fig. 4)
- Coastal fog formation and its importance for life in the Namib (e.g. fig. 5)
- Water availability and ephemeral rivers in desert ecosystems (e.g. fig. 6)



Fig. 3: Welwitschia mirabilis, a long-lived species growing on the fringes of the Namib Desert, is well adapted to the desert due to its leathery leaves, its stem buried in the soil, and its wide-spread and deep root system. Photo: R. Glawion (2001).



Fig. 4: The movement of sand in the dune sea of the Namib can easily be observed due to the persistent winds. Depending on whether the wind will blow from one or several predominant directions, the dune sea will expand or oscillate. Photo: R. Glawion (2006).



*Fig. 5: Coastal fog from the Atlantic, sweeping as far as 60 km inland, provides moisture for many plant and animal species in the Namib (e.g. the fog-basking beetle *Onymacris unguicularis*). Photo: R. Glawion (2006).*



Fig. 6: Water is a rare sight in the salt-clay pans ("vleis") of the Namib Desert (cf. fig. 16). This pan called Sossusvlei had been filled with more than 3 metres of water from the ephemeral Tsauchab River after an unusually wet rainy season in the summer of 2006. Photo: R. Glawion (2006).

Some interesting topics for cultural heritage interpretation in the Namib Desert are:

- Archaeological sites of the !Khuiseb Topnaar community (e.g. fig. 7)
- Traditional land uses and subsistence farming in the Namib Desert (cf. chap. 3)
- Impact of tourism and mining in the Namib-Naukluft Park (cf. chap. 3)



*Fig. 7: Ancient grave site of the !Khuseb Topnaar people near Gobabeb. A skeleton from an adjacent grave was 1700 years old, and roots of the desert melon !nara were also placed in the grave, presumably by Khoisan people.
Photo: R. Glawion (2007).*

3 Identifying resource and land use conflicts

One of the key causes for land management conflicts in Africa are the multiple claims on limited resources by various stakeholders, resulting from unsettled or disputed land claims or from weak governance. The central Namib Desert in Namibia is, at present, an area of highly conflicting resource and land use claims (fig. 8). Goals to conserve the fragile environment clash with interests of local communities, commercial enterprises, and utilisation of natural resources. Due to the lack of an overall land management concept for the National Park territory, local communities, tourism operators, farmers, mines, different ministries and institutions of government, NGOs, and river basin management committees are trying to implement their own ideas of land use (GLAWION 2010).

The stakeholders and their land use interests within the central Namib-Naukluft Park are (cf. fig. 8):

- the indigenous community of the Topnaar whose land use claims within the protected area are not officially recognized by the state (figs. 9 and 10);
- the Government of the Republic of Namibia, represented by the Ministry of Environment and Tourism, which is responsible for the management of natural and cultural resources in Namib-Naukluft Park;
- tourism enterprises wanting to obtain concessions for tourism installations and operations inside the Park;
- the Gobabeb Training and Research Centre, with the mandate to use the area for scientific research and training (fig. 11);
- local farmers near the borders of the National Park, many of whom have given up conventional cattle farming, wanting access to National Park territory for their tourist safaris;
- mining companies pressing the government to issue mining concessions for uranium and copper inside the National Park.

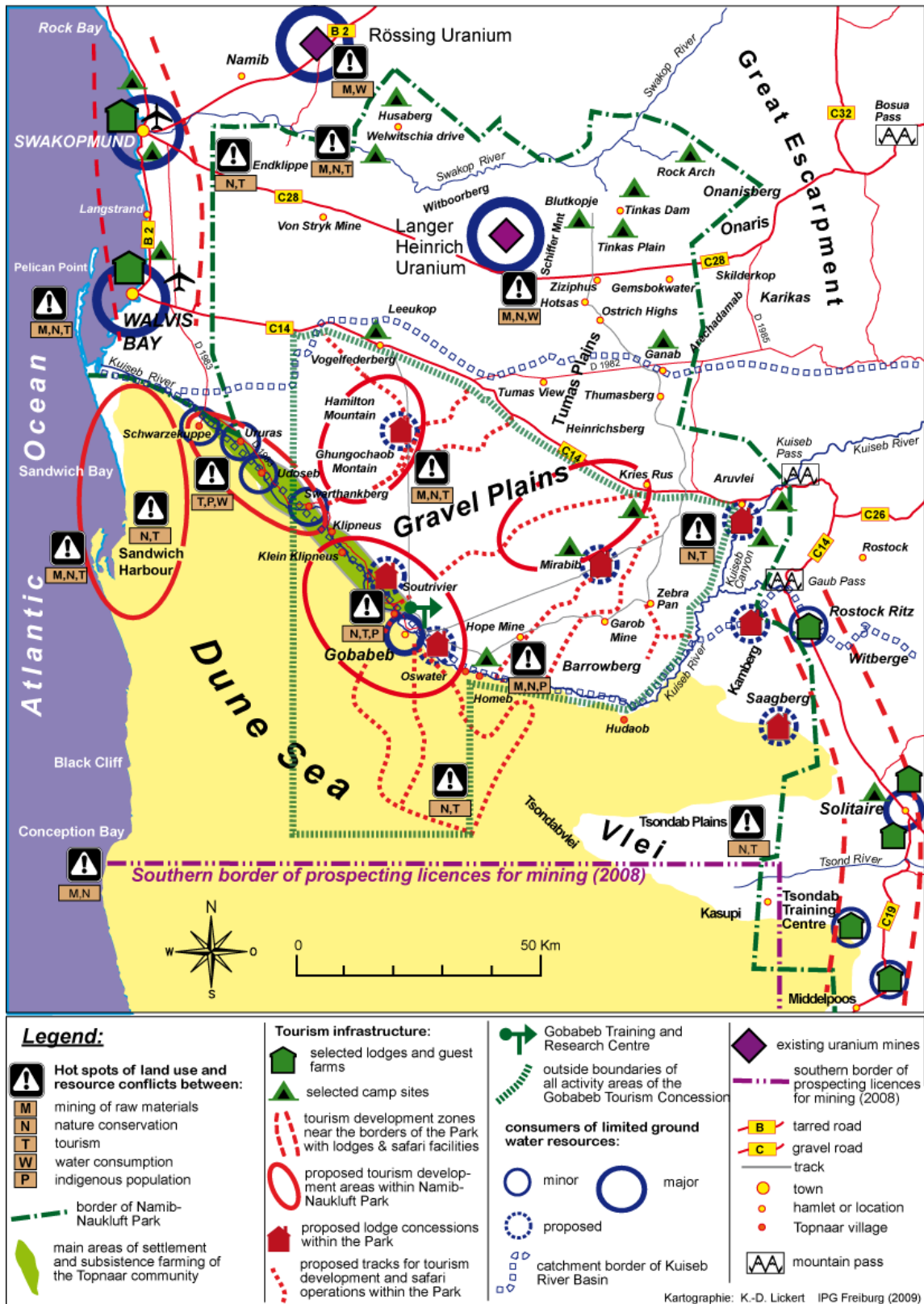


Fig. 8: Identifying resource and land use conflicts in the central Namib. Most conflicts in Namib-Naukluft Park arise around tourism development, prospecting and mining, over-utilisation of water resources, and land use claims of local communities. Most promising is the resolution of conflicts between the goals of nature conservation and the interests of the tourism industry and of the local Topnaar community through environmental awareness building and mediation, creating a win-win-situation between all of the relevant stakeholders. (Modified from GLAWION 2010).



Fig. 9: Thanks to Government support and development aid funding, running water from ground water resources is now available to the majority of !Khuiseb Topnaar households in the Namib. The water is also used to water the livestock. However, ground water resources are limited. Photo: R. Glawion (2007).



Fig. 10: The number of livestock has multiplied since the tapping of the ground water resources. However, the carrying capacity of the land has decreased drastically due to overbrowsing. Depleted remains of the Acacia riverine forests are seen in the middleground. Livestock now has to move 10-20 km daily to reach food sources. Loss of biodiversity and invasion of neophyte plants are results of the growing feeding pressure on riverine ecosystems in the National Park. Photo: R. Glawion (2007).



Fig. 11: Gobabeb Training and Research Centre, with the mandate to use the area for scientific research and training, promotes sustainable resource management. The water tower rising behind the meteorological instruments is the landmark of the station. Photo: R. Glawion (2006).

3.1 Tourism and Conservation

Over-utilisation of the desert ecosystems by high-impact, uncontrolled tourism can cause degradation of the environment, erosion, loss of biodiversity, and the destruction or pollution of scenic attractions (fig. 12). The high water demands of expanding tourism facilities in the Namib will have an impact on the alluvial aquifer and ground water table and thus change the species composition and biodiversity of the adjacent desert ecosystems.



*Fig. 12: Over-utilisation of the desert ecosystems by high-impact tourism causes degradation of the environment and destruction or pollution of scenic attractions. In taking away from the desert experience it violates a guiding principle for tourism, as laid out in the Draft General Management Plan of the Park.
Photo: R. Glawion (2005).*

The social impacts of tourism can be seen as a result of social interaction in different situations, such as when tourists visit local villages. Social interaction has effects on the language, because people in the hosting destination must be able to communicate with the incoming tourists. Furthermore the social impact refers to moral changes. The contrast between relatively poor Topnaar and visitors residing at luxury lodges might increase crime, as one possible social change. The cultural impacts of tourism are caused by cultural exchange through intercultural communication. Especially communities that have had very little exposure to other cultures might experience “culture shock”. Furthermore cultural arrogance, referring to different social or religious codes and the breaking of morals, might cause conflicts and changes (UNAM 2006).

According to the Draft Management and Tourism Development Plan of the Namib-Naukluft Park (MET 2004), large tracts of the National Park should be zoned as sites for tourism development. These areas coincide largely with the ephemeral wetland basins, some of which end in vleis (saltclay pans), which are identified as highly sensitive to human disturbance. Most of these areas are located along the northern and eastern fringe of the National Park (cf. fig.13).

Outside of the northeastern park boundary, tourism development has already increased substantially (cf. fig. 8). For example, alongside the access roads to the Sesriem entrance of the Sossusvlei area, hotels and lodges are being constructed or are enlarging their capacities. The high water demands of increasing tourist facilities may have an impact on the ground water table and thus change the species composition and biodiversity of the adjacent semi-arid and arid ecosystems. On a broad scale, conventional cattle farming along the eastern Namib Rand has been discontinued and replaced by guest farm operations. Private conservancies were established, and investors are building commercial tourist enterprises.

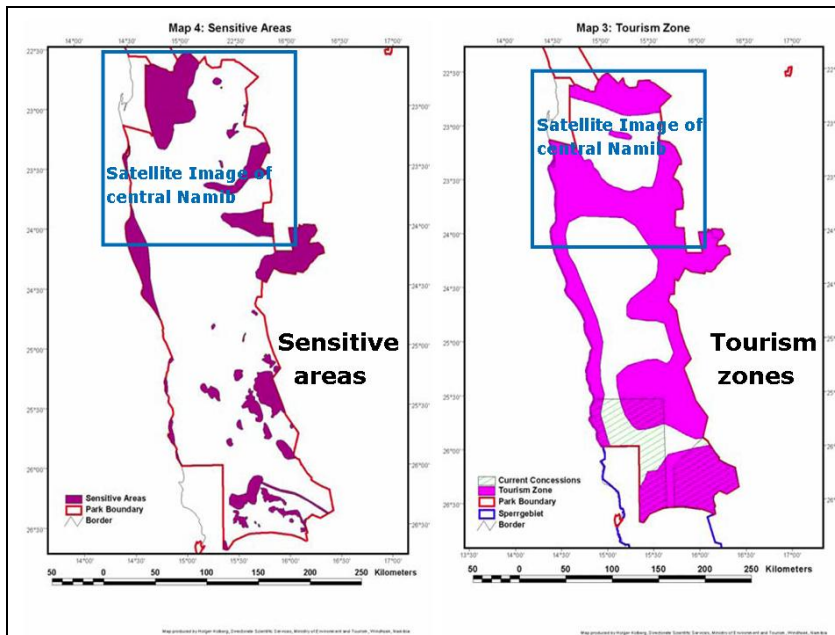


Fig. 13: Large tracts of Namib-Naukluft Park have been proposed for zoning as potential sites for tourism development. These sites incorporate nearly all areas which are identified as highly sensitive to human disturbance. The blue frames outline the approximate area extent of figs. 2 and 8. (MET 2004).

3.2 Mining and Conservation

The central Namib is rich in relatively easily accessible uranium and copper resources which are now the focus of prospecting and mining activities (fig. 14). This trend is likely to accelerate and increase in future. Potential constraints are severe water limitations, demanding that water be sourced by desalination on the coast. Concurrent with these developments is the demand for power for desalination. Infrastructures such as power lines and pipelines significantly increase the size of mining’s footprint, as well as risks from radiation pollution in air from dust created during mining and tailings dam operations, and contamination of groundwater resources. Socio-economic effects of mining are loss of opportunities for other, longer-term development options such as ecotourism due to degraded wilderness areas (fig. 15), and social impacts of rapid growth in surrounding urban centres – higher water demands, demands for social services (e.g. schools, clinics), higher incidence of social ills (e.g. crime), AIDS, and poverty as people come into the area.



Fig. 14: Prospecting operations for mining cause an impact on the environment by vehicle tracks, oil spills, and waste dumps. At this copper prospecting site of Old Hope Mine, the protected Welwitschia mirabilis plants growing adjacent to the drilling site could be jeopardized. Awareness building of the miners through environmental education could mitigate the impact. Photo: R. Glawion (2007).



Fig. 15: Abandoned open pits like this one at Uis do not only leave ugly scars in the landscape, but also contribute to ground water pollution and evaporation. Environmental training of the mining personnel, in combination with stricter laws for land reclamation, could minimize the long-term environmental impact by starting rehabilitation measures while the mine is still in operation. Photo: R. Glawion (2004).

4 Environmental education and attempts of heritage presentation in the Namib

Knowing that the Namib-Naukluft Park holds an interesting tourism and interpretation potential, a number of concepts for its utilisation have been worked out, mainly by the Ministry of Environment and Tourism (MET). Guiding principles for environmental education and tourism development have been established, and concepts for their implementation involving all interested stakeholders by using participatory approaches have been evaluated.

4.1 Guiding principles for environmental education and interpretation relating to tourism in Namib-Naukluft Park

The Management and Tourism Development Plan of Namib-Naukluft Park (MET 2004) is a draft plan which has established preliminary guiding principles for the park, however without participation of local stakeholders.

In its section “Community and Social” the plan focuses on the key role of environmental education for conservation and tourism:

“The role of environmental education cannot be overstated in fostering an understanding of the value of conservation of this unique ecosystem. Long-term benefits can be gained by investing in education which focuses on the desert environment and arid land ecosystems and associated culture and history. There is a strong synergy between environmental education and the tourism product. Research must therefore focus on unlocking this knowledge for use by both groups” (MET 2004, p. 26).

According to the plan it is the policy of MET to achieve environmental education through the establishment of formal partnerships targeted mainly at tourists, schools, students, decision makers and community leaders. These agreements will focus on the interpretation of the desert environment, its functioning, threats to it and its value, ensuring those most disadvantaged also have the opportunity to experience the desert and its unique creatures and landscapes (MET 2004, p. 26).

The plan stresses that in order to mitigate the impact of tourism on sensitive ecosystems, visitors to specific concession areas will have to make use of qualified guides who will

have to be trained in responsible use of the different landscapes and the ecological issues in each area. *“And of great importance, guides will need to be skilled in interpreting the desert landscape, its wildlife, plants, history and culture to their guests”* (MET 2004, p. 22).

In its guiding principles for tourism development, the plan specifies that *“Discovery of the landscapes (physical and historical) through personal and guided interpretation, is the primary tourism product”* (MET 2004, p. 23). To meet this goal, *“Guided tours by qualified (as agreed by MET) guides will be the preferred use of most landscapes, where personal experience based on interpreting the desert environment is critical”* (MET 2004, p. 23). The use of interpretive material in the ‘self-drive’ areas especially to highlight responsible use of the area and how to explore the environment is highly recommended. The different landscapes within Namib-Naukluft Park and their potential for guided and self-guided activities are depicted in Appendix 1.

Despite these guiding principles, very few examples of professional visitor-oriented heritage interpretation (cf. LEHNES & GLAWION 2006) exist in the park as of today. There are, however, a few examples of qualified heritage presentations offered in guided tours and self-guided trails.

4.2 Examples of guided tours and self-guided trails

Gobabeb Training and Research Centre offers guided walking trails through the station compounds, the Kuiseb riverbed, and into the dune sea. The trails are offered to visiting classes of university and high school students, but also to individual guest researchers, and conducted by long-term interns from Grinnell College (Iowa/USA). Interpretation focuses on the desert environment, the research facilities and its experimental designs, and renewable energy production and water treatment. Due to the high competence and enthusiastic engagement of the guides, who also train short-term interns, the trails are very successful and well received by the participants (fig. 16). Addressed to future decision makers and stakeholders, such heritage interpretation contributes to a better understanding of the ecological and economic problems arising from resource conflicts within the desert, and offers potential solutions.



Fig. 16: A short-term intern student from Michigan, USA, gives explanations to a class of Namibian University students on a guided trail around the Training and Research Station at Gobabeb. This site shows an experimental set-up with garden vegetables growing in the desert, treated with different kinds of waste water and with ground water. Photo: R. Glawion (2006).

Also very successful, but aimed at a different group of clients, guided tours through the saltclay pans of Sossusvlei attract large numbers of international tourists. Focusing on the adaptation of people, plants, and animals in the desert environment, indigenous guides take the tourists on combined driving and walking tours across the vleis and the adjacent sand dunes (figs. 17 and 18). The message that the desert ecosystem is in a process of constant change comes across very clearly.




Fig. 17: A local tour guide takes tourists on a tour around the Sossusvlei area of the Central Namib desert. The topic is "Desert ecosystem dynamics of the Namib". At this site, the dead Acacia trees are evidence of water which regularly flooded this salt-clay pan called "Dead Vlei" hundreds of years ago (cf. fig. 6). Finally a dune moved across the ephemeral river bed, cutting off the flow of water into this basin. The arid climate has prevented decay of the tree trunks until today. Photo: R. Glawion (2005).



Fig. 18: Delighting tourists, the local tour guide explains living habits and adaptations of the desert fauna. Photo: R. Glawion (2005).

One of the few examples of established self-guided trails in Namibia is found at the Gobabeb Training and Research Centre (figs. 19-22). A trail leaflet is provided for the Gobabeb Nature Trail (fig. 19), in combination with interpretive trail panels (figs. 20/21). The path is not marked by directional signs, but users have to orientate themselves by a sketch map that outlines the trail. However, a self-guided trail in the desert only marked on a rough map is not as easy to follow as in a cultivated landscape. The unmarked trail ends on the crest of a dune (fig. 22). It is important to instruct visitors about the potential dangers of the desert on the leaflet, and to have them carry water, sun protection, and a flashlight before they start on the trail. The topic of the "Nature Trail" is not quite correct, since the trail also explains man-made structures like the weather station, used water treatment facility, and weathering lab (fig. 19). An overall "theme" is missing (fig. 21).

1) Weather Station
 Meteorological data is recorded three times per day and sent to the Weather Bureau of the Department of Transport, Ministry of Works, Transport and Communications. Although rainfall is scarce (ave. 27mm per year) the climate at Gobabeb is relatively mild. Temperatures range between




First order weather station at Gobabeb

2) *Calicorema capitata*
 An inconspicuous woody species is well adapted to desert conditions. Due to the absence of leaves photosynthesis and respiration take place in the stems. Its reduced surface area allows it to withstand the extreme dry climate it is exposed to. Inland species are seasonal while the coastal species flower all year round.

3) Weathering lab
 This site allows scientists to test and compare the robustness of various materials through monitoring. Being outdoors it exposes materials to natural weathering agents such as extreme temperatures, fog, hot dry winds and sand blasting.

4) Kuiseb River, north bank
 Rain falling on the upland plateau allows the Kuiseb River to flow during most years, usually for a couple of days per year. This subterranean water supply supports the linear oasis which separates the dune sea from the gravel plains.

12) Dune crest (approx. 100m above the plane)
 A perennial spiky grass (*Stipagrostis sabulicola*) occurs on the lower dune slope. The grass is frequented by the Namib dune ant, *Camponotus detritus*. As you ascend the dune keep your eyes out for the nests of trapdoor spiders. One species, *Caparachne aureoflava*, tucks its legs in to wheel down the dune slope to escape predators. The upper dune bears no vegetation and is a micro-habitat for endemic specialist sand swimming organisms. The head-standing beetle, *Onymacris unguicularis*, takes its stance atop the dune to collect fog precipitation on its back. The side winding adder, *Bitis peringueyi*, licks moisture off its back. Descend via the slipface of the dune down to the river.



Head-standing beetle, *Onymacris unguicularis*

13) Riverbed
 Notice how the red dune sand encroaches on the river. The large linear dunes advance in a northward direction about one metre per year. The erratic flow of Kuiseb is sufficient to scour the red dune sand and thus maintains the current equilibrium. In a westward direction in the riverbed we pass beneath a pipeline transporting the Centre's water from a pump that is 19 metres underground. Underneath the pipe are two tall flood measuring gauges. A fig tree (*Ficus sycamorus*) grows from a rock crevice past the pipe.

GOBABEB
 Training and Research Centre
 oasis of learning

The Gobabeb Training and Research Centre is located in the Central Namib along the border that divides the coastal fog belt and the inland rainfall area.

Nature Trail

The route starts at the weather station near the main entrance of the centre - it passes along the tennis court and Kuiseb camp - across the Kuiseb River - past the spider enclosure and !Nara - to the linear dune in the east overlooking the Centre - return via the river in a western direction past the boulders.

Gobabeb, pronounced !Nobabeb in the Nama language means "the place by the fig tree"

Fig 19: A trail leaflet is provided for the Gobabeb Nature Trail in combination with interpretive trail panels. However, the topic of the "Nature Trail" is not quite correct, since the trail also explains man-made structures like the weather station, sewage treatment facility, and weathering lab. An overall "theme" is missing.



Fig. 20: This panel lists 3 species of grass growing at this site. For the non-botanist, it is nearly impossible to identify them. Photo: R. Glawion (2007).



Fig. 21: Providing interesting and concise information, this panel is missing an overall theme. Photo: R. Glawion (2007).



*Fig. 22: A self-guided trail in the desert is not as easy to follow as in a cultivated landscape. The next station of this unmarked trail is the crest of the dune in the background. It is important to instruct visitors about the potential dangers of the desert, and to have them carry water, sun protection, and a map before they start on the trail.
Photo: R. Glawion (2007).*

4.3 Case study: Training of !Khuseb Topnaar people for tour guiding

Plans for further tourism development in the area have included an evaluation of different locations for concessions within the National Park (cf. fig. 8). Gobabeb Training and Research Centre has received a tourism concession with the aim to:

- Generate income in order to achieve financial sustainability.
- To involve and provide meaningful benefits to the Topnaar community.
- To develop a successful, high value eco-tourism accommodation facility that showcases environmental sensitivity, provides scientific tourism activities, contributes to financing conservation activities, and empowers the local community (BOOTHWAY 2009, MUTOTA 2009, GOBABEB 2007, TARR 2006).

With reference to the local Topnaar community (cf. figs. 8-10), several workshops have analysed relations between different stakeholders (e.g. Topnaars, Gobabeb, Rössing Foundation, Ministry of Environment and Tourism, Ministry of Agriculture, Water and Forestry) using participatory approaches on a community level (fig. 23). The primary aim has been to identify sustainable uses of resources within the Topnaar community.



*Fig 23: Workshop at Gobabeb, analysing interests and relations between stakeholders to promote tourism development in the Kuiseb River Basin: Uranium-industry-based Rössing Foundation for funding, Tourism Operator for training of local Topnaar tour guides, Gobabeb as concession applicant, Topnaars as group of interest for tourism operations.
Photo: R. Glawion (2008).*

At present Gobabeb is involved together with Rössing Foundation (an NGO supported by the mining industry in the area) in providing training of local community members as tourism guides to make sure that the local actors benefit from the tourism developments (cf. fig. 24). After the careful recruiting of up to 20 suitable participants among the community members, a 5-day entry level training ending with an oral test is conducted by a tour guide trainer. Requirements from the tour guide trainer for participation are a minimum age of 21, sufficient English skills to follow the training, ability to read books and write, outspokenness, and ability to communicate well (FREDERIK & TRENKLE 2007). The best of the trained participants should find employment with a tour operator where they will get further on-the-job training. The most qualified candidates will be offered further training specifically for the Kuiseb River area, providing them information on the local environment, geology, animals and plants, archaeology, Topnaar life and culture, and survival techniques. The third training level involves field work and individual coaching.

The local tour guides will act as multipliers to help foster environmental education and enhance understanding of the surrounding nature and culture, within the community as well as towards tourists coming to the region. One aim of this long-term project is to minimise conflicts between the different interest groups by facilitating common planning between the different stakeholders (cf. Appendix 2).

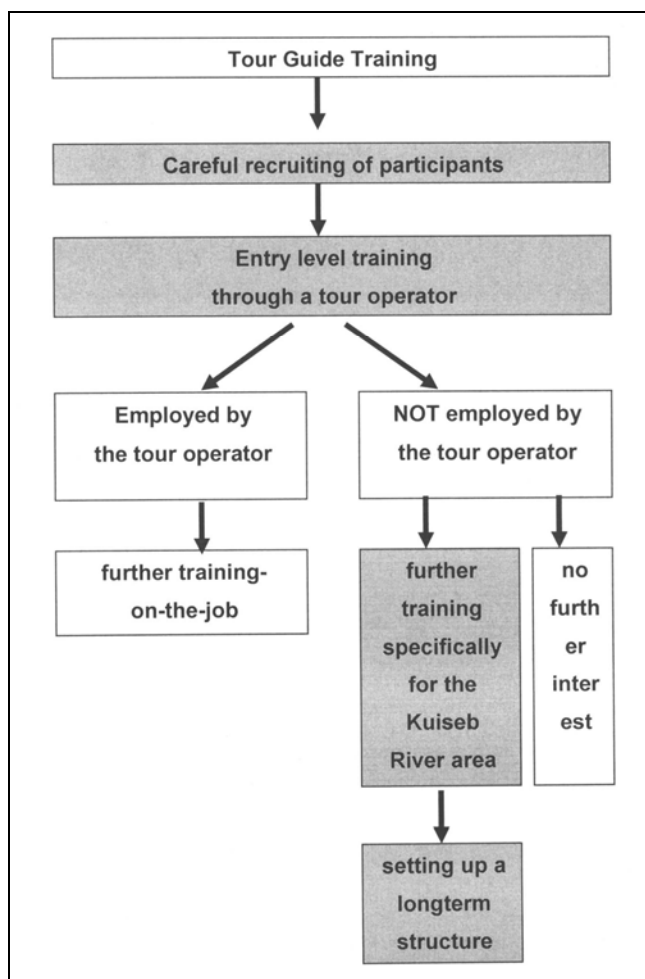


Fig 24: Outline of a training programme for Topnaar tour guides consisting of several levels. After the careful recruiting of suitable participants, a 5-day entry level training is conducted by a tour operator. The most qualified candidates will be offered further training specifically for the Kuiseb River area (FREDERIK & TRENKLE 2007).

4.4 Socio-cultural Impact of Tourism Development on the !Khuseb Topnaar people

A field study conducted by the University of Namibia in 2006 aimed to assess how the Topnaar communities near two proposed lodge sites on the Kuiseb River (!Narob and Khomaib) feel about tourism development, how they feel about taking part in the tourism venture, and how they think tourism in the area will impact or influence their livelihood as individuals and as a community at large (UNAM 2006). To gather these opinions students used both individual interviews and focus group discussions with a combination of structure and informal questions.

A total of 16 individual interviews were conducted and four group discussions were held at the villages. 6 people interviewed went to school up to grade 10, 5 went to school up to grade 7, and 5 never went to school. Of all people interviewed, 100% can speak Nama/Damara well, 88% Afrikaans, and only 19% can speak English well, while 44% do not speak English at all (fig. 25). Without additional foreign language courses, the potential of the rural Topnaar to get engaged in high-quality, high-revenue tourism activities such as tour guiding, is very limited.

The community came up with more positive impacts on what tourism can bring to their area compared to the negatives. The community identified needlework, cultural performances, making crafts for sale, and tour guiding as the activities they could do for their contribution to tourism. However they would need training in sewing, woodcarving and tour guiding, in order to have the required skills to take part in the tourism venture.

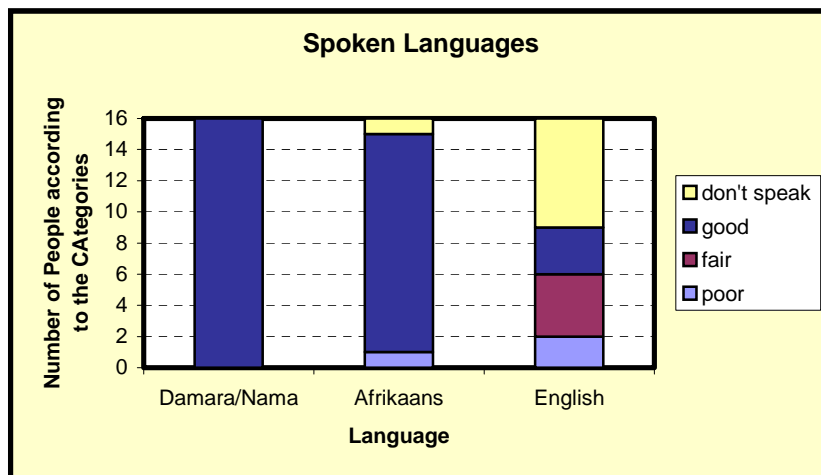


Fig. 25: Spoken languages of the people of the Topnaar community, based on 16 individual interviews (Source: Environmental and Social Impact of a Tourism Initiative in the Middle Kuiseb and Recommendations for Planning, Department of Geography and Environmental Studies, Field Work, University Of Namibia, For Gobabeb Training and Research Centre. 2006)

As positive assets of the proposed tourism concession, the Topnaar community expects better job availability and training opportunities to generate monetary income, improvements in roads and infrastructure, upgrading education, installation of electricity and sanitary facilities, construction of a clinic, shops, and agriculture development. As negative aspects of tourism development, they fear increasing conflicts, crime, grazing disturbances, and changes in behavior (UNAM 2006).

The communities are thinking of establishing a small living museum or cultural centre to present their history, culture and their way of living nowadays and in earlier days (personal interview with Chief Seth Kooitjie, Walvis Bay, Sep. 2005). The members of the communities have identified possible activities that enable them to participate in this tourism project by themselves, such as making traditional clothes and selling them to

the tourists, performing cultural dances and telling stories about their history and also making ornaments from the !Nara plant as well as providing tour guides to the tourists. The !Nara plant has always played a significant role in the traditional lives of the Topnaar (HENSCHEL ET AL. 2004). In the proposed cultural centre, the function of the !Nara could be interpreted within the triad of tradition, botany, and food (cf. fig. 26-28).

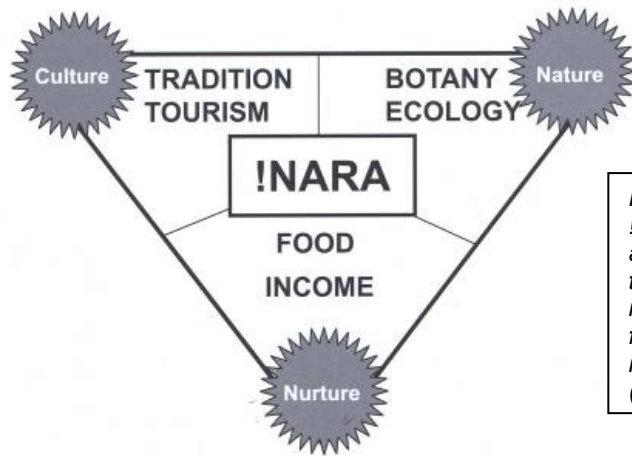


Fig. 26: Interpretation of the !Nara triad: botany of the !Nara and its role in desert ecology, traditional uses of the !Nara and its presentation for tourism, food from the !Nara and generation of income from its products (HENSCHEL et al. 2004).

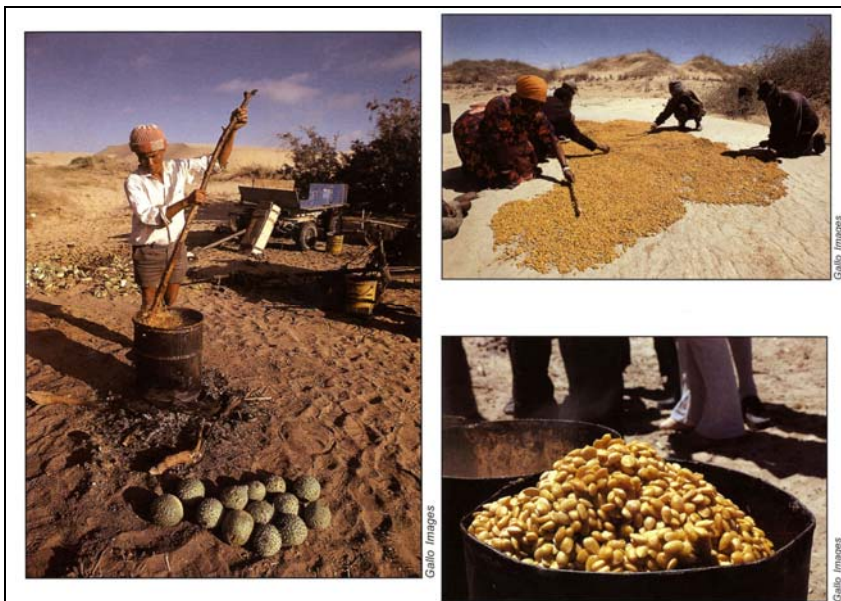


Fig 27: Harvesting and preparation of !Nara melons, as could be demonstrated in a cultural center or living museum. Harvesting !Nara involves long hours of picking the individual fruits and carrying them to a central place to be prepared. There the flesh is cut out and boiled down in large vats. This loosens the pips from the pulp and cooks them, after which they are separated and dried to make a nutritious snack, "butterpips". (HENSCHEL et al. 2004).



Fig 28: A young girl proudly shows some sun-dried #hoagaribeb made from boiled !Nara flesh after the pips have been removed. She shares the Topnaar's hope for a future where she will taste greater benefits and profits arising from !Nara harvesting (HENSCHEL et al. 2004).

5 Conclusion and Outlook

The Namib Desert offers a remarkable natural and cultural potential for heritage interpretation. This potential has not yet been utilised to a large extent. Existing examples of guided tours and self-guided trails are attempts of heritage presentation rather than professional interpretation. Guiding principles established in the Draft Management Plan of Namib-Naukluft Park point in the right direction by stressing the importance of environmental education and interpretation for developing the tourism potential of the Park. Innovative plans involving Gobabeb Training and Research Centre include concessions for lodges and tourism operations within the Park with the option for tourists to increase their scientific knowledge about a fragile environment by means of environmental interpretation. These plans also consider the integration of the local community members in tourism operations. Expected benefits of the proposed integration encompass improving livelihood options of the local communities and reviving their cultural traditions, improving employment opportunities in the region through the tourism industry, mitigating environmental impact through low-level tourism development, and increasing understanding of the local ecosystems and minimizing the negative impacts of commercial activities through environmental education (cf. fig. 8). This approach also has the potential to integrate mining activities more meaningfully into the Park. Natural and cultural heritage interpretation in the Namib Desert and its semi-arid periphery in Namibia can be useful to help conservation of the natural environment, to help resolving resource and land use conflicts, and supporting cultural regeneration of the local !Khuiseb Topnaar community.

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Appendix 1: The different landscapes within the Namib-Naukluft Park and their potential for guided and self-guided activities with their limitations and access (MET 2004, p. 20).

Landscape	Accommodation Type	Guided or Self	Limitations	Access and Use
Gravel Plains	Fixed/ permanent	Guided in new areas & Self drive on existing roads.	Off road driving has extremely long-term visual consequences and is difficult to control. Visibility is important on the plains.	Vehicles, only on roads & tracks. All other on foot.
Naukluft Mountains	Fixed/ permanent	Guided, trend towards guided. Although self guided on limited trails	The rugged terrain makes vehicle access difficult.	Best used on foot, although there may be limited access by vehicles to camps.
Canyons and rivers	Temporary in canyons	Guided	Access is difficult. Prone to flooding, therefore no or limited permanent structures.	Access at agreed access points only for guided trips, either on marked tracks or walking. 4x4 access on designated seasonal tracks.
Sand Sea	Semi-permanent/ Temporary	Guided, except on designated roads (Sossusvlei), these will be limited.	Water is a problem and travelling is difficult. Agree on driving protocol.	Driving is a problem and will be kept to a minimum in the most appropriate areas. Aerial safaris.
Inselbergs	Fixed/ permanent	Guided, limited self	In some areas access and water may be problems. Visibility may be an issue.	Vehicle access, but use of the area probably best done on foot.
Coast & Hinterland	Small fixed, semi/ permanent, make use of existing where possible	Guided only	Water limiting, access and control, especially Historical assets. Vehicle can be problematic.	Vehicles, aircraft (weather?) and possibly boats. Limited numbers.

Appendix 2: Selected projects and studies pertinent to the assessment of the physical and cultural base for multiple land use strategies and for heritage interpretation in the Namib with special focus on the Kuiseb River region

Subject	Description	References
<p>Tourism development in the Lower Kuiseb River region</p>	<p>Knowing that the Lower Kuiseb River region holds an interesting tourism potential, a number of concepts have been worked out - mainly driven by the Ministry of Environment and Tourism - to define the further tourism development in the area.</p> <p>This included a first evaluation for different locations and concessions within the Namib Naukluft Park.</p>	<p>Humphrey E (2006). Draft vision for tourism development in the Kuiseb River area of Namib Naukluft Park. Commissioned by Ministry of Environment and Tourism, Windhoek, Namibia.</p> <p>Tarr P (2006). Environmental scoping of potential tourism concessions in the Kuiseb River area of the Namib Naukluft Park. Commissioned by Gobabeb Training and Research Centre, Windhoek, Namibia.</p> <p>ECI Africa (2004). Tourism Market Feasibility Studies for two lodges in Namib Naukluft Park, Namibia. Commissioned by MET and MTI, Windhoek, Namibia.</p> <p>Busico cc. (2003): Namib-Naukluft Draft Management Plan. For Ministry of Environment and Tourism Directorate of Tourism. (unpublished)</p> <p>Bruce, G./Dauseb, R. (1998): Feasibility and Planning Study: Topnaar community Tourism Enterprises. Windhoek.</p> <p>Munsterer, M./Otto, S. (1994): Recommendation for a sustainable tourism concept in the area of the Namib Naukluft Park. Deru Gobabeb, Windhoek.</p>
<p>Tourism Concession for Gobabeb Training and Research Centre</p>	<p>Gobabeb has applied for a tourism concession with the aim to:</p> <ol style="list-style-type: none"> a) Generate income in order to achieve financial sustainability. b) To involve and provide meaningful benefits to the Topnaar community. c) To develop a successful, high value eco-tourism accommodation facility that showcases environmental sensitivity, provides scientific tourism activities, contributes to financing conservation activities, and empowers the local community. <p>A variety of meetings and workshops have taken place including the local community of the Topnaar to include their interests into the process.</p> <p>The decision on this application is still open.</p>	<p>Gobabeb Training and Research Centre (GTRC) (2007): Concession Application. Tourism concession in the Namib Naukluft Park for Gobabeb Training and Research Centre. Gobabeb.</p> <p>Ward P (2006). Identification and assessment of potential concessions for Gobabeb Training and Research Centre and the Topnaar Community. Commissioned by Gobabeb Training and Research Centre, Windhoek, Namibia.</p> <p>Interconsult (1999): Preliminary environmental assessment of the proposed development at the Gobabeb Training and Research Centre.</p>

<p>Evaluating the environmentally sensitive desert ecosystem</p>	<p>Monitoring environmental changes in the Namib Desert is one of the key areas of expertise of Gobabeb Training and Research Centre. This also includes efforts to conserve biodiversity and find realistic solutions to resource management.</p> <p>Gobabeb, amongst others, is integrated in BIOTA (BIOdiversity Monitoring Transect Analysis) and NaEON, the Namibian Environmental Observatories Network.</p>	<p>Henschel, J./ Mfunne, J. (2006): NaEON, the Namibian Country Network for Monitoring the Environment (abstract). ILTER/ELTOSA Conference.</p> <p>Seely, M./ Henschel, J./ Zeidler, J. (2004): Research for development in Namibia - from desert ecological research to sustainable development decision support, p.37-52. In: Shakir Hanna/ Mikhail (Ed): Soil zoology for sustainable development in the 21st Century.</p> <p>Moser, P./ Makuti, O./ Henschel, J.R. (2004): Vegetation monitoring along the Kuiseb ephemeral river in the Namib Desert - a tool to assess environmental change. Poster presentation at the 5th Waternet / Warfsa conference.</p> <p>Seely, M.K./ Zeidler, J./ Henschel, J.R./ Barnard, P. (2003): Creative problem solving in support of biodiversity conservation. In: Journal of Arid Environments, vol. 54.</p> <p>Seely, M.K./ Henschel, J.R. (2003): Best practices in the world's oldest desert. In: Lemons, J./ Victor, R./ Schaffer, D.: Conserving biodiversity in arid regions.</p>
<p>Resource management</p>	<p>In an ephemeral river area such as the Kuiseb with scarce and irregular rain fall, resource management is one of the most important and controversial issues.</p> <p>The situation for the local community, the Topnaar, has been analysed between the different stakeholders (Topnaars, Gobabeb, Ministry of Environment and Tourism (MET), Ministry of Agriculture, Water and Forestry (MAWF)) in several workshops, including participatory approach on a community level.</p> <p>The primary aim was to identify a sustainable use of resources within the Topnaar community.</p>	<p>Henschel, J.R. (2006): Sustaining life and livelihood along an ephemeral river. In: Geographische Rundschau International Edition, vol.2, ed. 3.</p> <p>National Planning Commission (2006): Site Report Armstraat, Based on Village Level Participatory Poverty Assessments in Erongo Region during Nov/Dec 2005.</p> <p>AgriFutura CC (2005): On the agricultural & animal auctioning assessment exercise in the Topnaar community.</p> <p>Henschel, J./ Dausab, R./ Moser, P. / Pallett, J. (2004): Community-based resource management of !nara: a baseline study. !NARA fruit for development of the Kuiseb Topnaar.</p> <p>Gobabeb Training and Research Centre (2004): Application for Third World Network of Scientific Organizations' (TWNISO) project on "Promoting Best Practices and Use of Biodiversity of Global Significance in Arid and Semi-Arid Zones": !Nara: The Green Gold of the Kuiseb Topnaar.</p> <p>Botelle, Andy/ Kowalski, Kelly (1995): Changing resource use in namibia's lower Kuiseb river valley: perceptions from the TC. Institute of Southern African Studies at the University of Lesotho and the Social Sciences Division at the University of Namibia, DRFN, Windhoek.</p>

<p>Basin Management of the Kuiseb River, and testing an approach to basin management committees on the Kuiseb River, central west Namibia</p>	<p>The Kuiseb Basin Management Committee (KBMC) was established through the project Interactive Environmental Learning and Action in the Kuiseb (ELAK). The project was facilitated through the DRFN and funded by the European Union (EU). Focus was on participation amongst all decision-makers within and dependent upon the Kuiseb River Basin; communication, cooperative learning and action was incorporated into the process.</p>	<p>Jacobson, PJ, Jacobson, KM, Seely, MK. 1995. Ephemeral rivers and their catchments: sustaining people and development in western Namibia. Desert Research Foundation of Namibia, Windhoek: 167 pp.</p> <p>Amakali, M. and L. Shixwameni, 2002. River Basin Management in Namibia. 3rd WaterNet/Warfsa Symposium, Dar es Salaam, 30-31 October 2002.</p> <p>Botes, A., J. Henderson, T. Nakale, K. Nantanga, K. Schachtschneider and M. Seely 2003. Ephemeral rivers and their development: testing an approach to basin management committees on the Kuiseb River, Namibia. <i>Physics and Chemistry of the Earth</i> 28: 853-858.</p> <p>Manning, N. (editor). 2004. Basin Management: working together to manage our water and natural resources. Big Issue, Windhoek, Namibia 16 pp.</p> <p>Chase, M.J.(2002). International river basin management; a case study of the Okavango River basin, Masters Thesis, UKZN</p> <p>Werner, W., Bethune, S., Falke, M., Heyns, P., Kinahan, J., Kinahan, J., Klintonberg, P., Oosthuizen, F. Seely, M. and Wittneben, F. 2008. Water Resources Management Plan for the Kuiseb Basin. Kuiseb Basin Management Committee (KBMC), Walvis Bay.</p>
<p>Integrated Sustainable Land Management (ISLM), Namibia. Country Pilot Partnership (CPP) funded by GEF through UNDP</p>	<p>A programme to adopt a nationally integrated SLWM approach, ensuring cross-sector coordination and implementations of SLWM activities. To pilot and adapt methods and models for SLWM and test the replicability of these across the country. Proposal based on the following reference, <i>inter alia</i>:</p>	<p>Kambatuku, JR (editor), 2003. FIRM, the forum for integrated resource management: putting communities at the centre of their own development process. DRFN, SDDI, Windhoek, 25 pp.</p> <p>Kambatuku, JR (editor), 2003. Local level monitoring for enhanced decision making. DRFN, NAPCOD, Windhoek, 21 pp.</p> <p>Klintonberg, P, Seely, M. 2004. Land degradation monitoring in Namibia: a first approximation. <i>Environmental Monitoring and Assessment</i> 99: 5-21.</p> <p>Mosimane, A. (1998). Local knowledge of natural resources in rural Namibia. A case study of Salambala Conservancy in Eastern Caprivi.</p> <p>Halstead, L.C. (2003). Making community based tourism work: an assessment of factors contributing to successful community based tourism development in Caprivi, Namibia. Masters Thesis, UKZN</p> <p>Kavela, L.T.T. (2006). Developing a land information system (LIS) application for communal land dispute resolution. A case study of the Oshana Communal Land Board. Masters Thesis, UKZN</p>

<p>The impact of mining activities in the Namib Desert</p>	<p>The central Namib is rich in relatively easily accessible uranium resources which are now the focus of prospecting and mining activities. This trend is likely to accelerate and increase in the future. Environmental impacts and constraints are :</p> <ul style="list-style-type: none"> • Severe water limitations, demanding that water be sourced by desalination on the coast. Concurrent with these developments is the demand for power for desalination. Infrastructures such as powerlines and pipelines significantly increase the size of mining's footprint. • Risks from radiation pollution in air from dust created during mining and tailings dam operations, and contamination of groundwater resources. • Loss of opportunities for other, longer-term development options such as ecotourism due to degraded wilderness areas • Social impacts of rapid growth in surrounding urban centres – higher water demands, demands for social services e.g. schools, clinics; higher incidence of social ills e.g. crime, aids, poverty as people influx into the area. 	<p>Presentation at Uranium Africa 2007 Conference: J.Pallett – Environmental management for mining and exploration activities in the Namib. March 2007.</p>
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<p>Namibia's Program to Combat Desertification (NAPCOD)</p>	<p>An environmental program aiming to better understand, control and prevent further degradation of vulnerable land and water resources. Activities of the environmental, agricultural and water sectors in addition to those of the local communities and NGOs were integrated.</p>	<p>Klintonberg, P, Seely, M. 2004. Land degradation monitoring in Namibia: a first approximation. <i>Environmental Monitoring and Assessment</i> 99: 5-21.</p> <p>Kruger, A.S. 1998. Closing the gap between farmers and support organisations in Namibia. <i>Advances in GeoEcology</i> 31: 965-970.</p> <p>Seely MK. 1998. Can science and community action connect to combat desertification? <i>Journal of Arid Environments</i> 39 (2): 267-277.</p> <p>Seely, M K, C Hines and A C Marsh 1995. Effects of human activities on the Namibian environment as a factor in drought susceptibility, 51-61. <i>In: Moorsom, R, J Franz and M Mupotola (eds). Coping with aridity: drought impacts and preparedness in Namibia.</i> Brandes & Apsel/NEPRU. 250 pp.</p> <p>Seely MK, Jacobson KM. 1994. Desertification and Namibia: a perspective. <i>Journal of African Zoology</i> 108 (1): 21-36.</p> <p>Seely, M, Moser, P. 2004. Connecting community action and science to combat desertification: evaluation of a process. <i>Environmental Monitoring and Assessment</i> 99: 33-55.</p> <p>Seely, M, Woehl, H. 2002. Research competence in combating desertification. <i>Agr. Rural Dev.</i> 1: 57-61.</p> <p>Seely, M, Woehl, H. 2004. Connecting research to combating desertification. <i>Environmental Monitoring and Assessment</i> 99: 23-32.</p>
<p>Increasing skills and facilitating cooperation between different stakeholders along the Kuiseb</p>	<p>Training and research programs aimed at increasing know-how and skills with potential to increase service provision for tourism in future.</p>	<p>Gobabeb Training and Research Centre and Rössing Foundation (2007): Topnaar Tour Guide Training Programme. Course Module.</p> <p>Polytechnic of Namibia – Gobabeb In-Service-Training (GIST) 5 Report (2007): Potential effects of mining related activities on the environment in the Namib Naukluft Park</p> <p>Polytechnic of Namibia – Gobabeb In-Service-Training (GIST) 4 Report (2007): Solutions for sustainable resource management to improve livelihood of rural communities in arid environments.</p> <p>Polytechnic of Namibia – Gobabeb In-Service-Training (GIST) 3 Report (2006): Baseline Study at Khomaib and !Narob along the Kuiseb River. Assessing the current environmental and social situation in relation to the potential tourism development at Khomaib and !Narob.</p> <p>Polytechnic of Namibia – Gobabeb In-Service-Training (GIST) 2 Report (2006): Current state and potential development options for the Kuiseb Topnaar communities' agriculture / land use. Use of natural resources to sustain livelihoods while ensuring conservation of resources.</p>